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# Introduction of Entrepreneurial Education Ecosystem in Korea

November 8, 2023

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HANBAT National University

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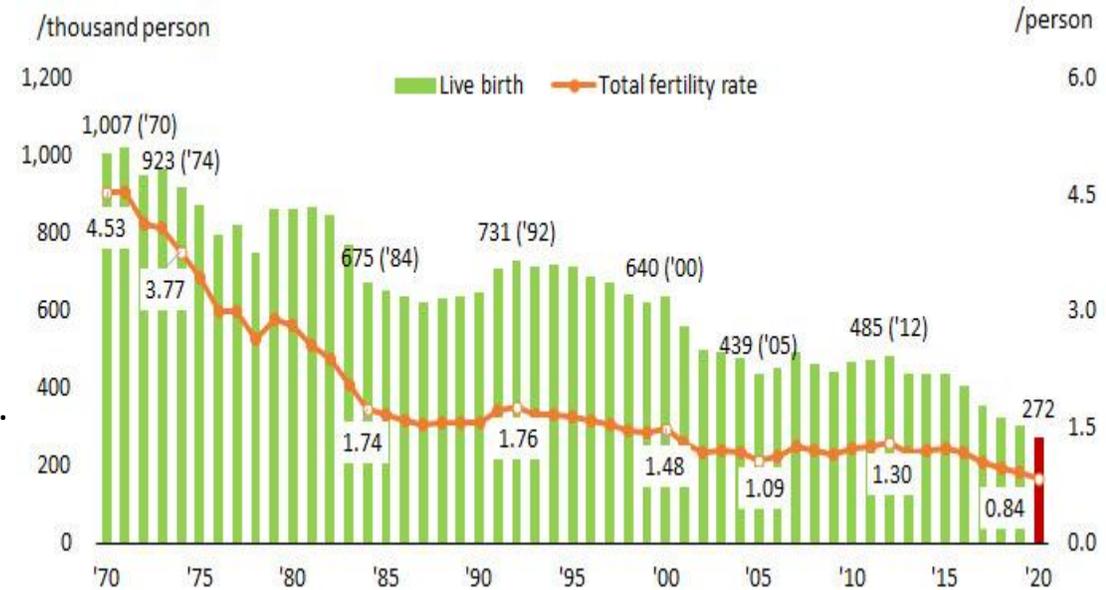
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- 2023~Present : Director, Institute of Creation, Habat National Univ.
- 2009~2018, Director , Korea Institute of Entrepreneurship and Startup Development(KISED)

# 1. Universities Facing Declining Birthrates in Korea

## ▣ Changes in Birth Rate and College-Aged Population

- 1) South Korea breaks its own record for world's lowest fertility rate (CNN, Feb.22. 2023)
- 2) According to the Korea Statistics Office, the birth rate in South Korea has been declining for decades. In 2023, the birth rate was 0.78 births per woman
  - Gradual decline (1970-1990): "In the 1970s, number of birth was over 1 million, in the 1980s it was 800,000, and in the 1990s, it was 700,000. This shows a gradual decline."
  - Sharp decline (2010-2021): "However, since 2010, the number of birth has declined sharply. In 2020, it was 270,000, which is a quarter of the level it was 50 years ago."



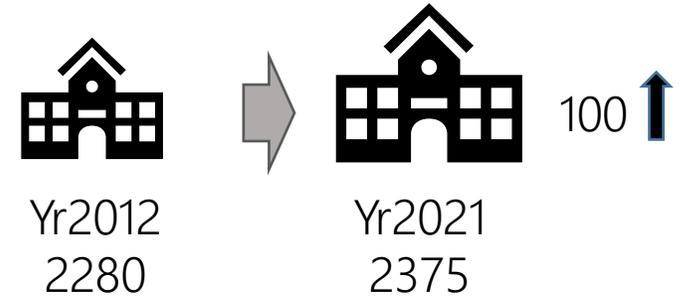
[Fig.] Trends in the Number of Births and the TFR in Korea 1970-2020.  
Note: Kang, C. I., Lim, K. E., & Kim, J. (2022)

# 1. Universities Facing Declining Birthrates in Korea

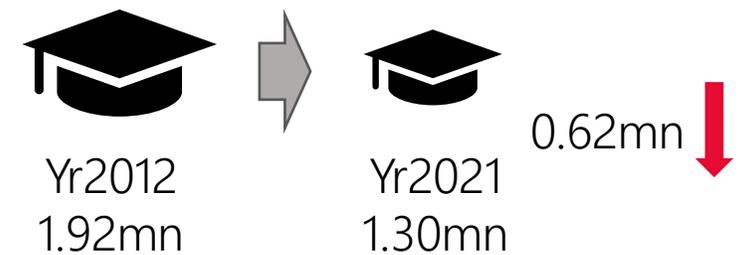
## Changes in Birth Rate and College-Aged Population

- 1) The number of high schools in South Korea is increasing, while the number of students is declining
- 2) In 2012, there were 2,280 high schools in South Korea. By 2021, that number had increased to 2,375. However, the number of students declined from 1,920,000 in 2012 to 1,300,000 in 2021. This represents a decline of 620,000 students.
- 3) "Based on the 2021 university enrollment target of 470,000, the number of students is expected to be approximately 190,000 short in 20 years.

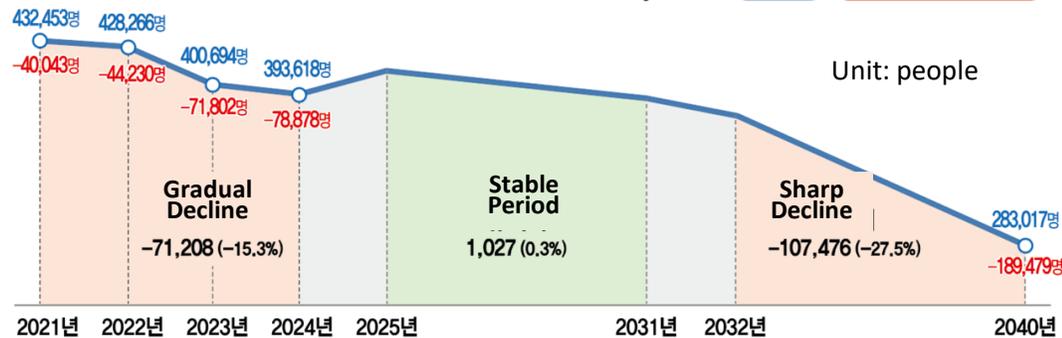
Number of Highschool



Number of Highschool students



Estimated number of college-eligible people in South Korea from 2021 to 2040



[Fig.] Estimated number of college-eligible people in South Korea from 2021 to 2040

# 1. Universities Facing Declining Birthrates in Korea

## Conclusion

### 1) Future of Universities in Korea?

The three main challenges facing Korean higher education are:

- ① Enrollment decline: The Korean birth rate has been declining for decades, which is leading to a decline in the college-aged population. This is putting pressure on universities to reduce enrollment.
- ② Funding decline: The government is providing less funding for higher education, which is putting pressure on universities to find other sources of revenue.
- ③ Graduate unemployment: The economic restructuring of Korea is leading to a decline in the number of jobs available to graduates. This is putting pressure on universities to prepare students for the workforce.

### 2) Solutions:

- ① Partner with businesses: Universities should partner with businesses to create internships, co-ops, and other opportunities for students to gain practical experience.
- ② Partner with government agencies: Universities should partner with government agencies to provide services to the community and address social needs.
- ③ Partner with research institutions: Universities should partner with research institutions to conduct research and develop new technologies

## 2. The Emergence of Entrepreneurial Universities in Korea

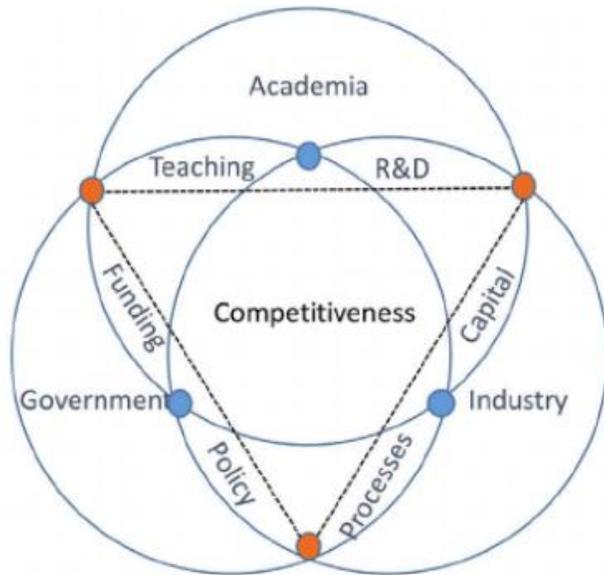
### ▣ Characteristics Entrepreneurial Universities in Korea

- Government support: The Korean government has been supportive of entrepreneurship education. This has helped to create a more favorable environment for entrepreneurial universities.
- Collaboration with industry: Entrepreneurial universities collaborate with industry to provide students with opportunities to gain practical experience.
- A focus on entrepreneurship: Entrepreneurial universities have a strong focus on entrepreneurship education. They offer courses, programs, and resources to help students and graduates develop their entrepreneurial skills.

## 2. The Emergence of Entrepreneurial Universities in Korea

### ▣ Triple Helix

## Be an Entrepreneurial University



[Fig.] Etzkowitz(2017), Triple helix model

The triple helix structure is a model of innovation that proposes that three key actors - government, academia, and industry - work together to create new knowledge and technologies. (Etzkowitz and Loet Leydesdorff 1990s)

(1) Education system: This component is defined as schools, universities, and other educational institutions. Within this helix, the need for human capital (such as students, teachers, scientists, researchers, and high-skilled entrepreneurs) is composed of the research and dissemination of knowledge

(2) Economic system: This component is composed of businesses, industries, and other economic organizations. This helix focuses on the economic capital of the nation (such as entrepreneurship, equipment, products, technology, and money)

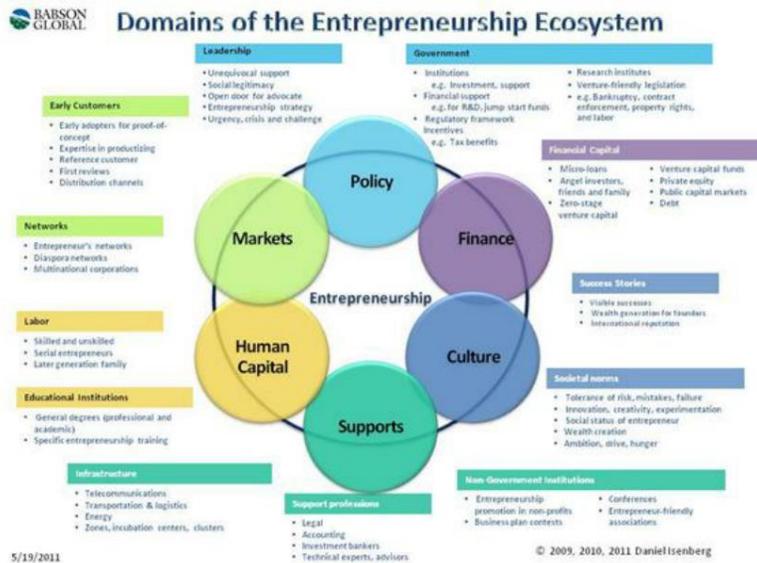
(3) Natural environment: The natural environment provides natural capital (such as resources, crops, and diverse animals) for sustainable development and people

(4) Media and culture-based public goods: This component is integrated into two forms of capital. The first is information capital based on cultural public goods (traditions and values) and media public goods (such as television, the internet, and newspapers)

(5) Political system: This component includes the government, laws, and regulations, such as political or legal capital (such as ideas, laws, plans, and politicians)

# 2. The Emergence of Entrepreneurial Universities in Korea

## Isenberg's model of an entrepreneurial ecosystem



Six Factors:

The Isenberg Model identifies six key factors that contribute to a successful entrepreneurship ecosystem:

- **Policy:** The government's role in creating an enabling environment for startups, such as providing tax breaks and regulatory support.
- **Finance:** The availability of capital for startups, from angel investors to venture capitalists.
- **Culture:** The values and beliefs that support entrepreneurship, such as a tolerance for risk and failure.
- **Support:** The availability of resources and services to help startups, such as mentorship and training programs.
- **Human Capital:** The availability of skilled workers and entrepreneurs.
- **Markets:** The availability of customers and opportunities for startups to grow.

Key Stakeholders:

Each of these factors has key stakeholders who play a role in creating and sustaining a successful entrepreneurship ecosystem.

- **Government:** Government agencies, such as the Small Business Administration, play a role in developing policies, providing financial support, and promoting entrepreneurship culture.
- **Investors:** Angel investors, venture capitalists, and other investors provide capital for startups.
- **Universities and research institutions:** These organizations provide education and training for entrepreneurs and help to create new knowledge and technologies.
- **Entrepreneurs and leading companies:** These individuals and organizations create new businesses and create jobs.

[Fig.] Isenberg's model of an entrepreneurship ecosystem  
Note : Isenberg(2011)

# 3. Korean Government's Entrepreneurship Support Policies

## Policy Framework

Creating a system that supports anyone who wants to start a business

<p>[Task 1] : Stage-based entrepreneurship education and support</p>	<p>[Task 2] : Establishment of a practical entrepreneurship environment that links startup motivation to actual startup</p>	<p>[Task 3] : Creation of an entrepreneurship-friendly culture to promote technology startups</p>
<p>[Sub-Task 1] : Establishment of a foundation for entrepreneurship experience education for elementary, middle, and high schools</p>	<p>[Sub-Task 6] : Expansion of entrepreneurship support and strengthening of linkages between businesses</p>	<p>[Sub-Task 8] : Establishment of institutional environment to create a 'startup boom' atmosphere</p>
<p>[Sub-Task 2] : Activation of entrepreneurship education within universities</p>		
<p>[Sub-Task 3] : Support for graduate school startups</p>	<p>[Sub-Task 7] : Expansion of support after early startups</p>	<p>[Sub-Task 9] : Provision of entrepreneurship information and promotion of a sense of entrepreneurship challenge</p>
<p>[Sub-Task 4] : Support for startup preparation during military service</p>		
<p>[Sub-Task 5] : Support for entrepreneurship retries</p>		

[Table.] Framework of Government Support for Industry-Academy Collaborations Note : Joint Plan for Industrial Education and Industry-University-Research Cooperation (2020)

# 3. Korean Government's Entrepreneurship Support Policies

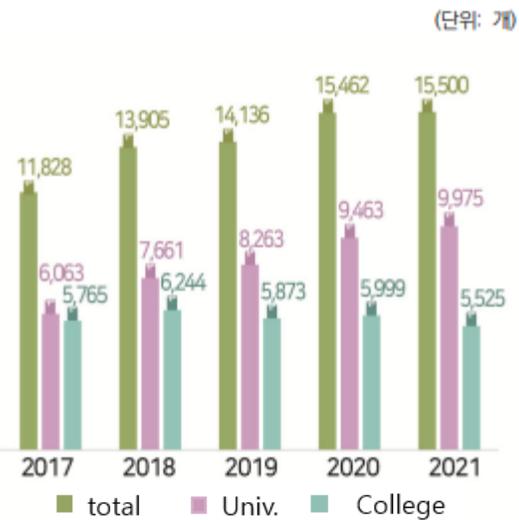
## Government Support Programs of Entrepreneurship for Universities

Category	Human Resource	R&BD	Startup Support	Infrastructure
Program	LINC3.0 ( Leaders in INdustry- university Cooperation 3.0)	Laboratory Startup Support Program	Startup-focused university	Business Incubator
Government	MOE	MOE, MSIT	MSS	MSS
Budget (yr2023)	USD 300mn (4,070억원)	USD 11mn (144억원)	USD 56mn (763억원)	USD 74mn (100억원)
Num. of Support Univ.	135	13	9	257
Key Features	Support for entrepreneurship education and initiatives	Support for R&BD, Startups for Professors in Univ.	Support for Startups, R&D, Education in Region & Univ.	Support for Business Incubation

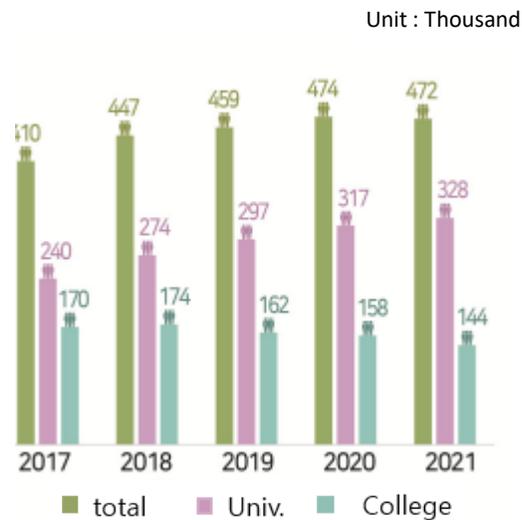
# 4. Key Entrepreneurship Indicators of Korean Universities

## ▣ Entrepreneurship Education

Number of Subjects for Entrepreneurship



Number of students taken entrepreneurship courses



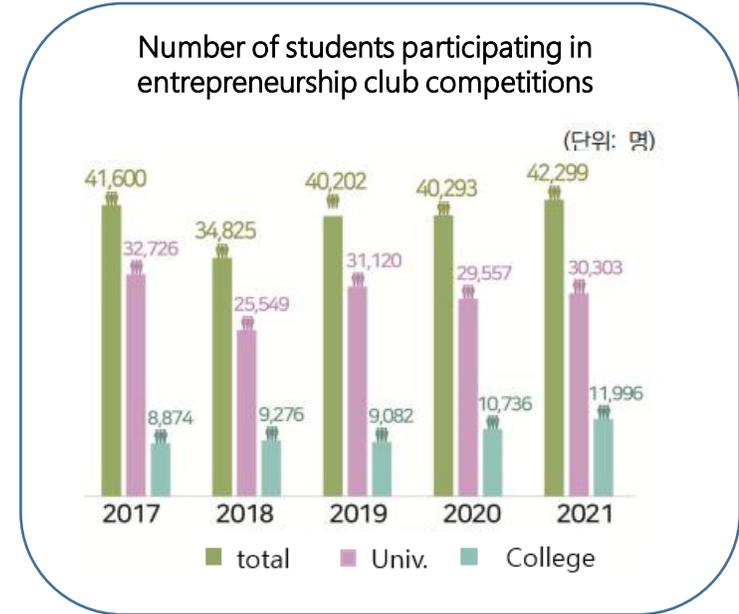
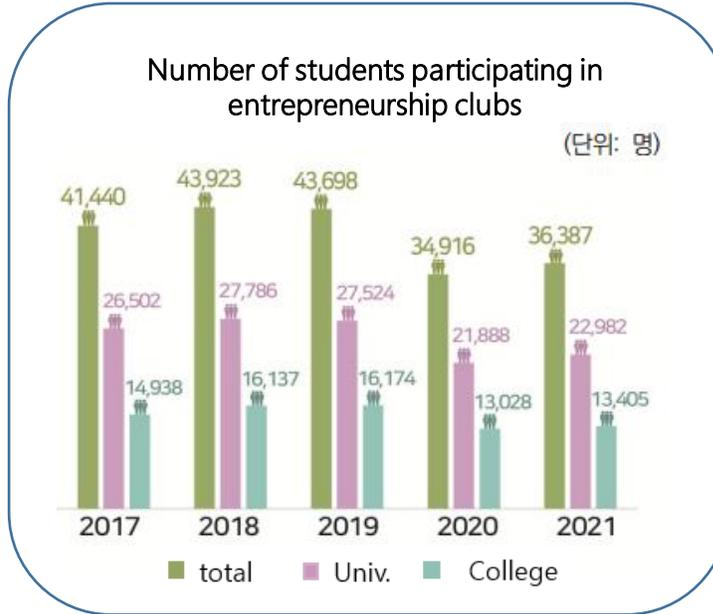
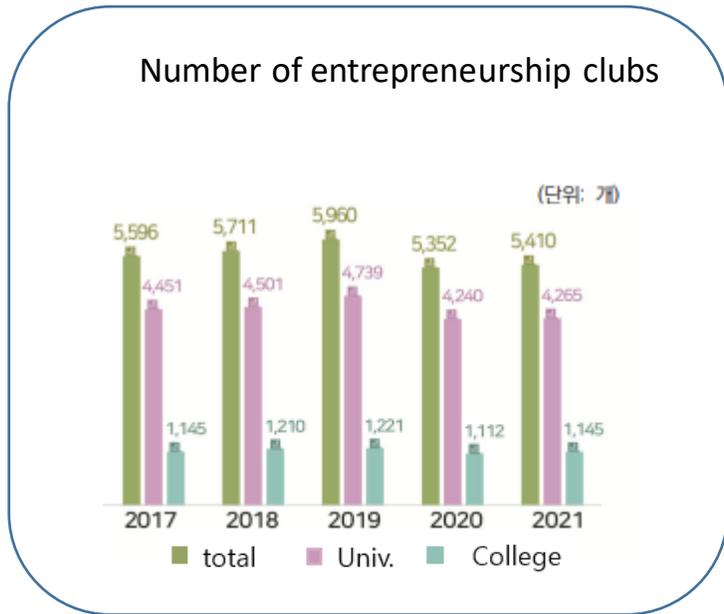
Undergraduate students at universities and colleges in 2022

: 2,392,238

Note : NRF(2022)2021 Survey of University-Industry Cooperation Activities

# 4. Key Entrepreneurship Indicators of Korean Universities

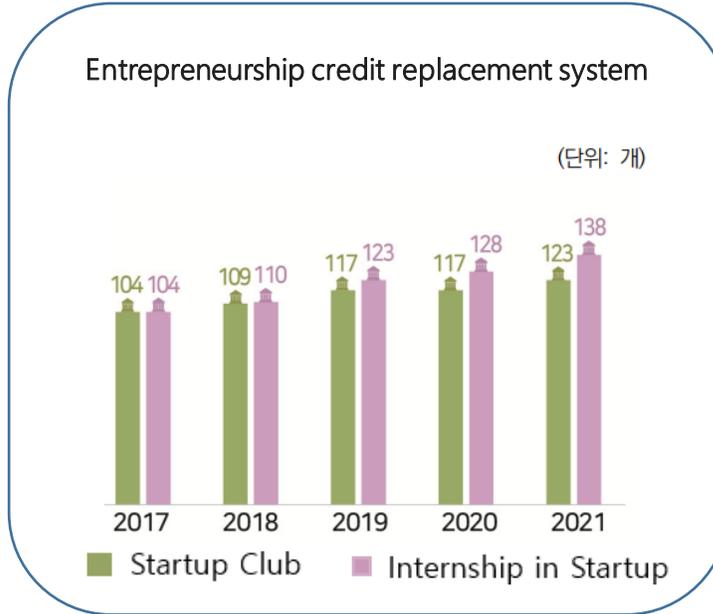
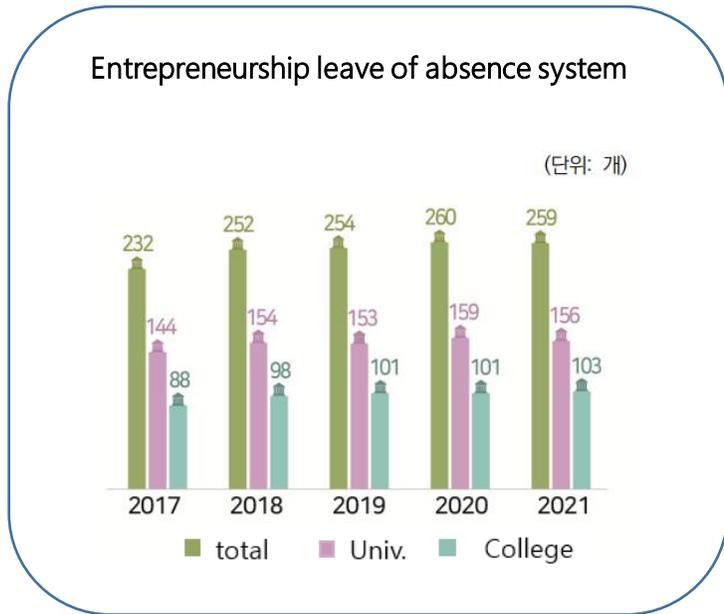
## Entrepreneurship Clubs



Note : NRF(2022)2021 Survey of University-Industry Cooperation Activities

# 4. Key Entrepreneurship Indicators of Korean Universities

## University entrepreneurship-friendly academic system



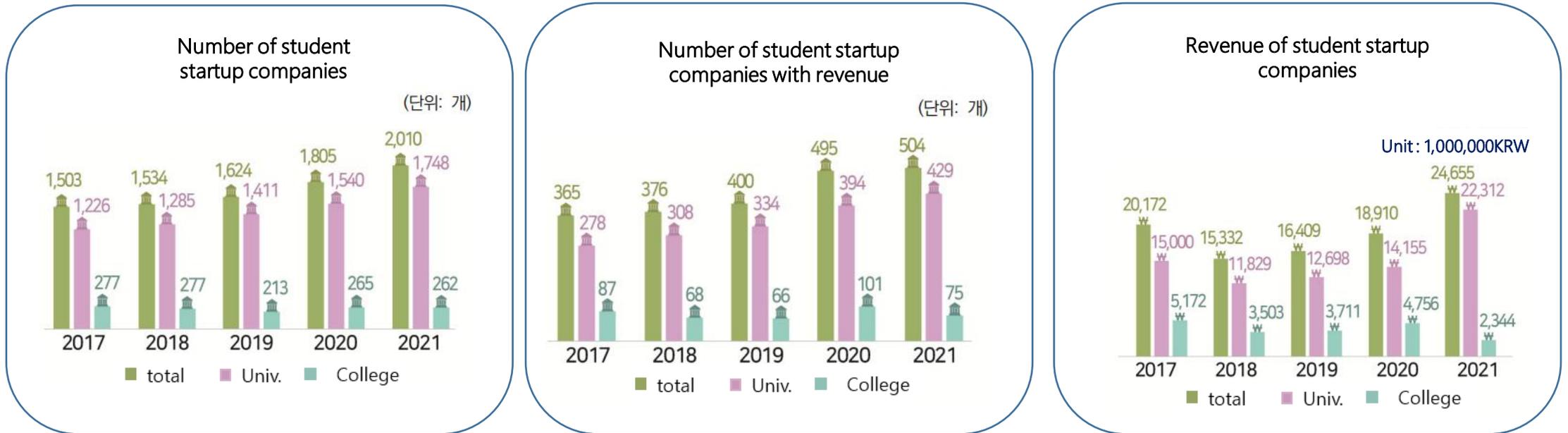
Number of universities(250) and colleges(171) in 2022

: 421

Note : NRF(2022)2021 Survey of University-Industry Cooperation Activities

# 4. Key Entrepreneurship Indicators of Korean Universities

## Student startup company status



In 2021, 2,010 student startups generated \$18,155,375.55 in revenue. This means that the average student startup generated \$9,000 in revenue. However, it is important to note that the revenue generated by student startups founded in 2021 is for the year they were founded.

Note : NRF(2022)2021 Survey of University-Industry Cooperation Activities

# 5. The Future Direction of Entrepreneurship Education at Universities

## ▣ Traditional face-to-face teaching



[Fig.] Face-to-face lecture

- Traditionally conducted in a classroom setting with students.
- Allows for adjustment of the difficulty and pace of the lecture based on student reactions, attitudes, and expressions during the lecture.
- Makes it easy to build rapport with students.
- Facilitates immediate feedback and discussion-based classes through direct interaction.
- Improves understanding through nonverbal communication.

# 5. The Future Direction of Entrepreneurship Education at Universities

## 강의환경의 변화 – 전통적 강의



[Fig.] Face to face Team work

- Students can build social relationships with each other.
- Direct interaction between team members can lead to faster feedback and consensus.
- Language and non-verbal communication can help to quickly resolve conflict situations.
- Face-to-face team activities are conducive to the formation of mutual trust and bonding among team members.

# 5. The Future Direction of Entrepreneurship Education at Universities

## ▣ The increasing availability of online entrepreneurship education

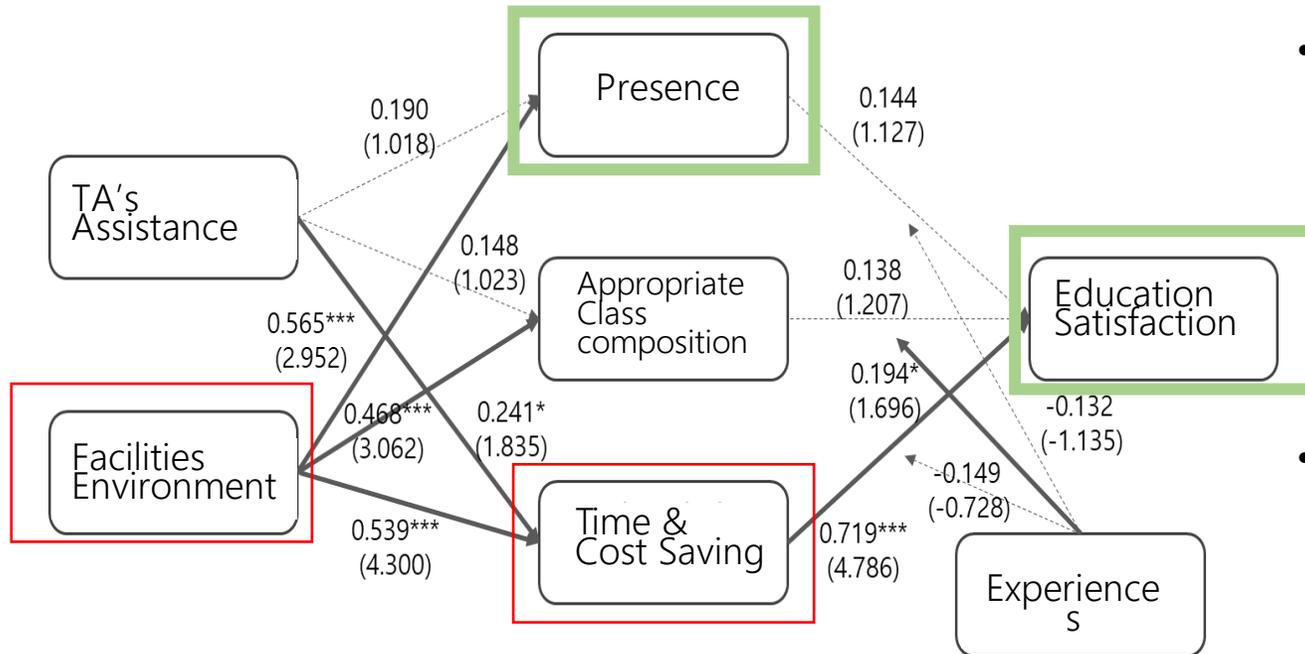


[Fig.] Faculty environment for distance education

- The emergence of online classes after COVID-19 to prevent the spread of infectious diseases
- The emergence of a new type of education that allows for real-time interaction without face-to-face contact, as video online classes have difficulty in interaction
- Although limited, it is possible to communicate in real time and understand the atmosphere of the students through the screen
- However, differences in class participation occur depending on the learning environment (ownership of cameras and microphones)
- There are many constraints on cooperative activities due to limited interaction between students

# 5. The Future Direction of Entrepreneurship Education at Universities

## ▣ The increasing availability of online entrepreneurship education



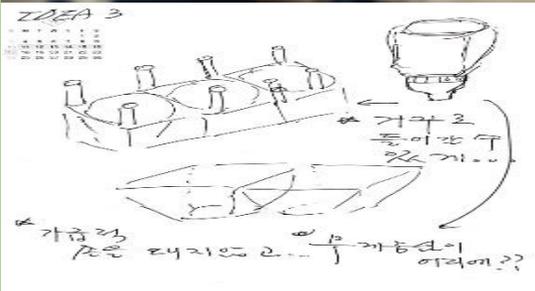
- The activation of non-face-to-face real-time education, mentoring for sophisticated class composition, technical educational environment, professor-student interaction in class, and the convenience of time and space that online education has can all affect learners' satisfaction.
- In order to apply non-face-to-face real-time education to the university's class environment, members must prepare and implement platforms that allow interaction with class contents in order to increase learners' satisfaction.

Note : Byun and Kim(2020)

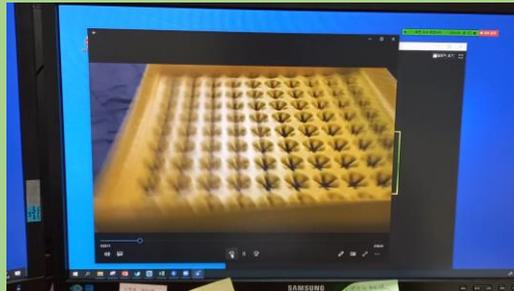
# 5. The Future Direction of Entrepreneurship Education at Universities

## ▣ Attempts at hybrid entrepreneurship education

### Face-to-Face



### Synchronous



- After COVID-19, face-to-face classes are recovering.
- However, the advantages of online classes are being used in education linked to companies, such as real-time online classes.
- Attempts are being made to find ways to simultaneously implement the advantages of face-to-face classes and the advantages of real-time online classes.
- Some of the classes are held in person, and Zoom is used to overcome the difficulty of bringing together professors, students, and companies at the same time due to time and distance constraints.

# 5. The Future Direction of Entrepreneurship Education at Universities

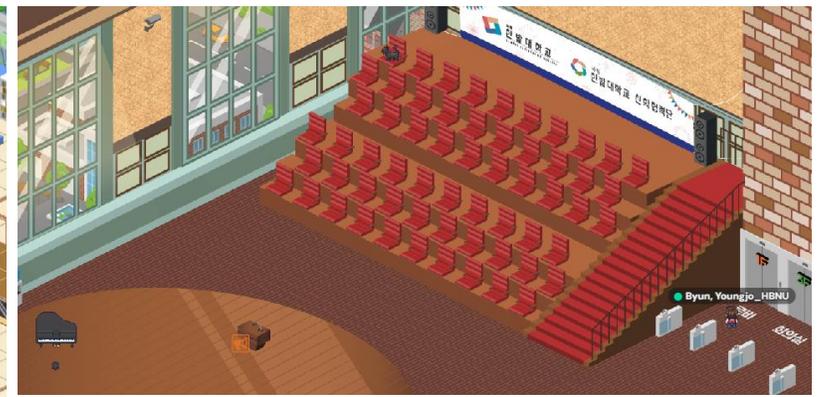
## ▣ Attempts at hybrid entrepreneurship education

### Metaverse – Is it Proper Solution for FUTURE?



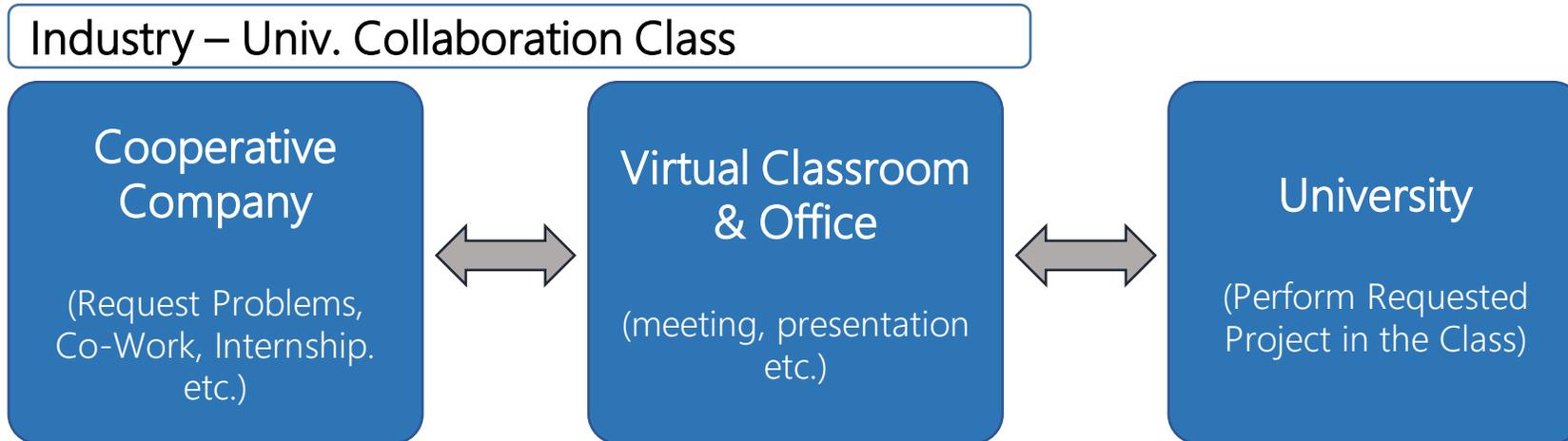
- In 2021, one of the school buildings was implemented in the metaverse to create an educational environment.
- Lecture halls, auditoriums, and meeting rooms were constructed to encourage gatherings of school members.
- Only the space was constructed, and the development of internal content was limited due to the burden of development costs.

[Fig.] Metaverse Campus in GatherTown



# 5. The Future Direction of Entrepreneurship Education at Universities

- ▣ Attempts at hybrid entrepreneurship education



[Fig.] Conceptual Diagram of Industry – Univ. Collaboration Class

# 5. The Future Direction of Entrepreneurship Education at Universities

- ▣ Attempts at hybrid entrepreneurship education

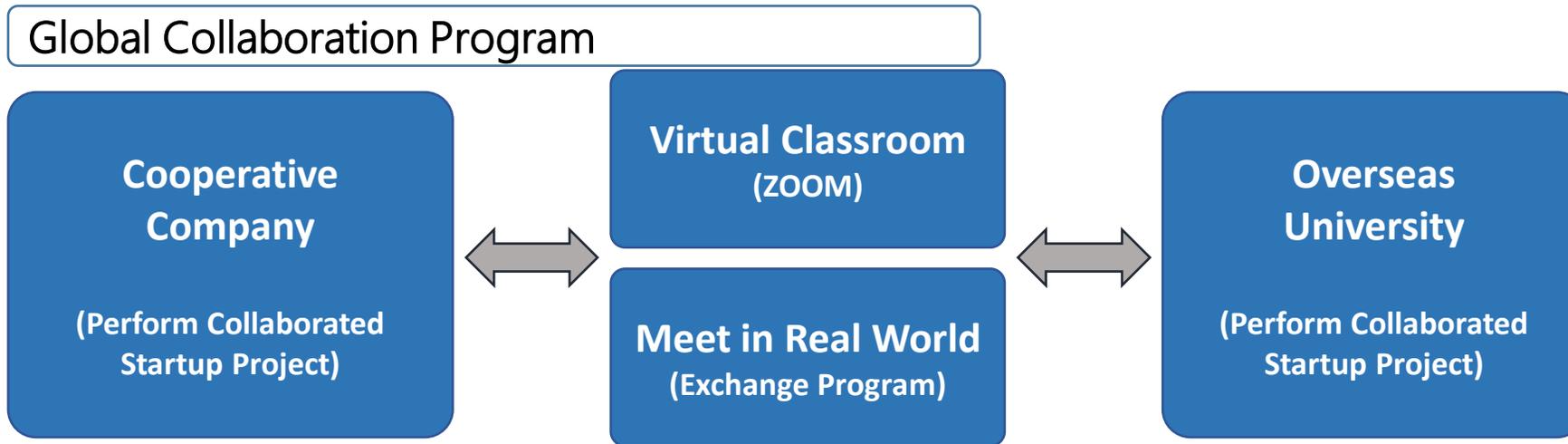
## Theory Based Building a Company in Metaverse



[Fig.] Conceptual Diagram of Industry – Theory Based Building a Company in Metaverse

# 5. The Future Direction of Entrepreneurship Education at Universities

- ▣ Attempts at hybrid entrepreneurship education



[Fig.] Conceptual Diagram of Industry – Global Collaboration Program

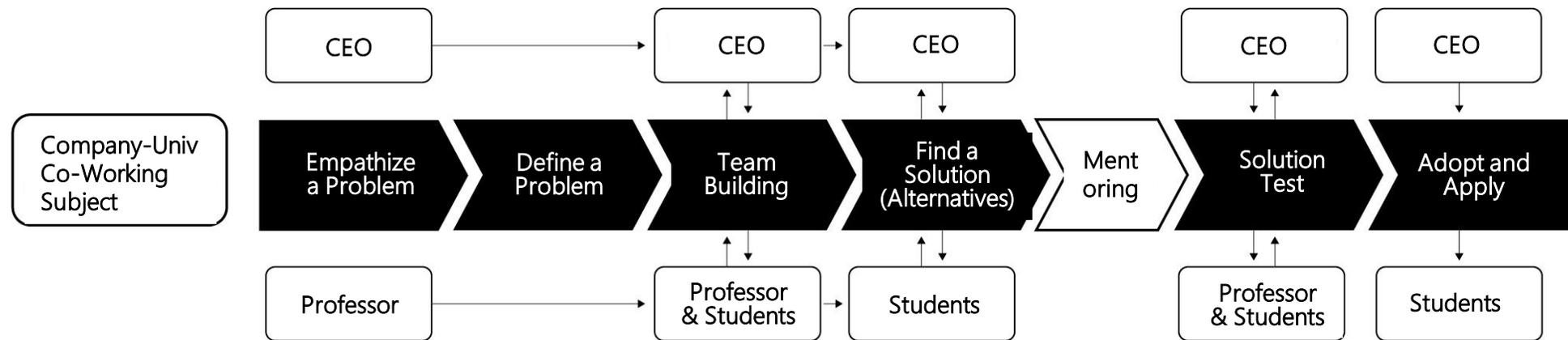
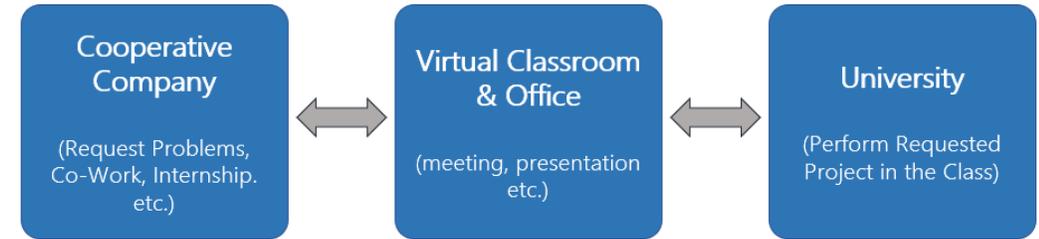
# 5. The Future Direction of Entrepreneurship Education at Universities

## Industry-Academia Problem-Solving-Centered Education(2022)

### Subject Brief

- Course name : Managing Virtual Company in Metaverse
- Goals : Understanding a Problem Solving, Experience in solving company problems (Package Design, Analyzing Market)
- 15 Weeks, 60hrs. (Regular Subject)
- Participated Company : Univ. Incubated Prof. founded small sized venture startup
- 1 Professor and 5 students participated
- Grading : Completion of Project and Quality of result

## Industry – Univ. Collaboration Class



[Fig.] Instructional Structure and Process of Subject

# 5. The Future Direction of Entrepreneurship Education at Universities

## Industry-Academia Problem-Solving-Centered Education(2022)



③	평가제 특징	1	2	3
colle)	습도조절, 탈취기능	140,500/100kg 코스넷 CWT-필름(코스넷) 100kg	140,500/100kg 코스넷 CWT-필름(코스넷) 100kg	\$25/ 1kg(병풍용) 알리바바 25x1.0mm 중국
불안판	흡착력	\$826-2354/ Ton 알리바바 코코넛 필링	\$600-2,200/ Ton 알리바바 코코넛 필링	\$895-1195/ Ton 알리바바 코코넛 필링
규조토	탈취력	\$315/ Ton 알리바바 규조토	\$300/Ton 알리바바 황색 규조토	\$305/ Ton 알리바바 황색 규조토
녹차분	녹차향탈취효과 응고력향상(친환경)	연마센드팩토리	아프보넷(+두부)	로카센드
커피분	커피향탈취효과 응고력향상(친환경)	연마센드팩토리		
황토분	자연 그대로의 자연향 반려묘묘호성증가제도 용	연마센드팩토리	PETSHIELD(+벤트) https://www.petsheld.com	화분필드
베어링소다	탈취력	Ashu Suntran Chemical Co., Ltd. US\$202.00 - US\$255.00 (베어링소 다) 제트릭 동(제트릭 동(베어링소))	Shouguang Dinghao Trading Co., Ltd. US\$0.01	Shandong Juchong Chemical Co., Ltd. US\$0.01
알라이트	탈취력	양승군형		



[Fig.] Course Results

- Goal: Analyze the cat litter market and design product packaging.
- Results:
  - ① Company building created with a metaverse creation tool
  - ② Research laboratory created with a metaverse creation tool
  - ③ Market analysis data
  - ④ New product packaging design



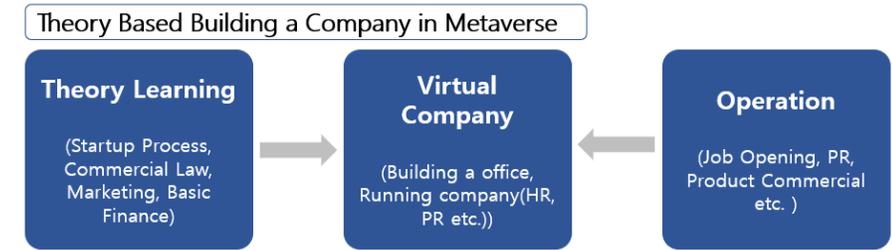
- Although students were able to acquire practical experience by directly participating in the problem-solving of industries(+)
- the course was time-consuming for students.(-)
- Students who lacked prior knowledge of marketing, finance, etc., had difficulty learning.(+)
- The metaverse was only used as a simple tool for interaction, so it was not different from Zoom.(-)

# 5. The Future Direction of Entrepreneurship Education at Universities

## Simulation of Corporate Operations Using the Metaverse (2023)

### Subject Brief

- Course name : Managing Virtual Company in Metaverse
- Goals :
  - Understanding Startup (Establishing a Virtual Company)
  - Understanding a Legal Condition, HR, Marketing, Strategies for New Venture
  - Provide and understanding of Using GatherTown
- 15 Weeks, 60hrs. (Regular Subject)
- 1 Professor and 7 students participated
- Grading : Completion of Project and Quality of Virtual Company Operating



[Fig.] Key Processes of Building and Running a Startup

# 5. The Future Direction of Entrepreneurship Education at Universities

## Example : Write a Certificates of Incorporation

등기사항전부증명서(현재유효사항)

등기번호	관할등기소에서 부여한 일종의 관리번호. 6자리로 표현되며 관할 이전을 할 경우 변경
등록번호	"법인등록번호"의 줄임말. 사람과 비교하면 주민등록 번호와 같음(설립-해산까지 동일 유지)
상호	구구구구
본점	대전 유성구 동서대로 105 (한밭대학교 35동) 110호
광고방법	회사의 광고는 인터넷 홈페이지 및 SNS영 한다. 다만, 전산상에 또는 그 밖의 부득이한 사유로 회사의 인터넷 홈페이지에 광고를 할 수 없는 때에는 서울특별시에서 발행되는 일간 한국경제신문에 한다.
1주의 금액	금 100원
발행할 주식의 총수	125,000 주
발행주식의 총수와 그 종류 및 각각의 수	자본금의
발행 주식의 총수 : 500,000 주 보통주식 : 500,000 주	
<p><b>법인의 설립목적</b></p> <ol style="list-style-type: none"> <li>1. 통신판매 및 점포판매를 결합 종합 도소매업</li> <li>2. 문구, 의류, 화장품, 가전, 가구, 기타 상품의 도소매, 중개 및 위탁 판매업</li> <li>3. 전자상거래 및 통신판매업</li> <li>4. 전자출판, 영상, 통신 및 정보서비스업</li> <li>5. 출판업</li> <li>6. 인터넷 쇼핑물 판매업</li> <li>7. 산업재산권 등 임대사업</li> <li>8. 설계, 디자인 용역업</li> <li>9. 문구 용품 제조 및 판매</li> </ol>	

**EXAMPLE**

임원에 관한 사항

2023 10/06 공동 대표 이사 이지은, 임하은.

기타사항

진환사채

주식매수선택권

등기연월일

회사가 최초로 설립된 날짜가 기재되는 란

등기기록의 개설사유 및 연월일

기타 공금한 사항은

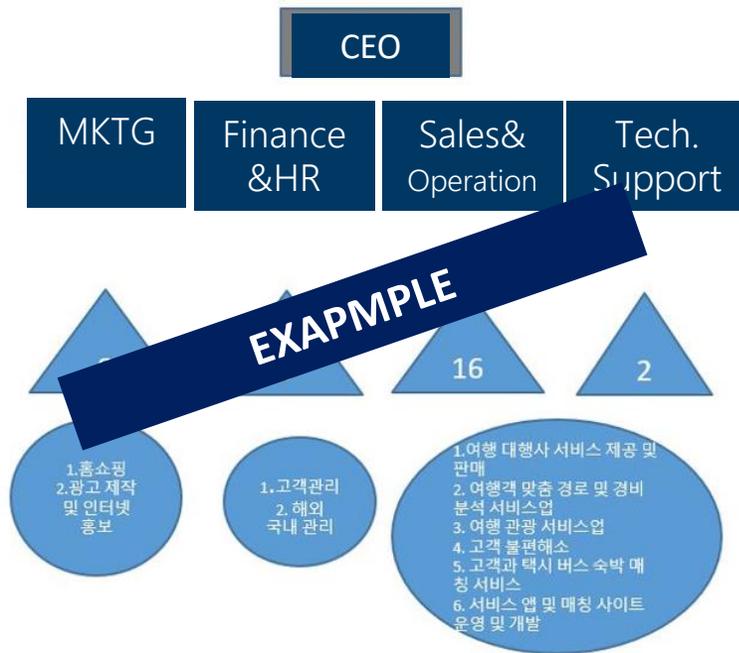
<https://m.blog.naver.com/PostView.naver?toHttpsRedirect=true&blogId=caullio&no=80181755185>

### Goal : Understanding Corporation

1. How to make a Company Name
  - Duplicate verification
  - Related to Business Domain
2. Determine Number of Shares to be issued (Based on Commercial Law)
3. Designation of the main office's location
4. Purpose of establishment of a corporation

# 5. The Future Direction of Entrepreneurship Education at Universities

Example : Making a Organizational Chart

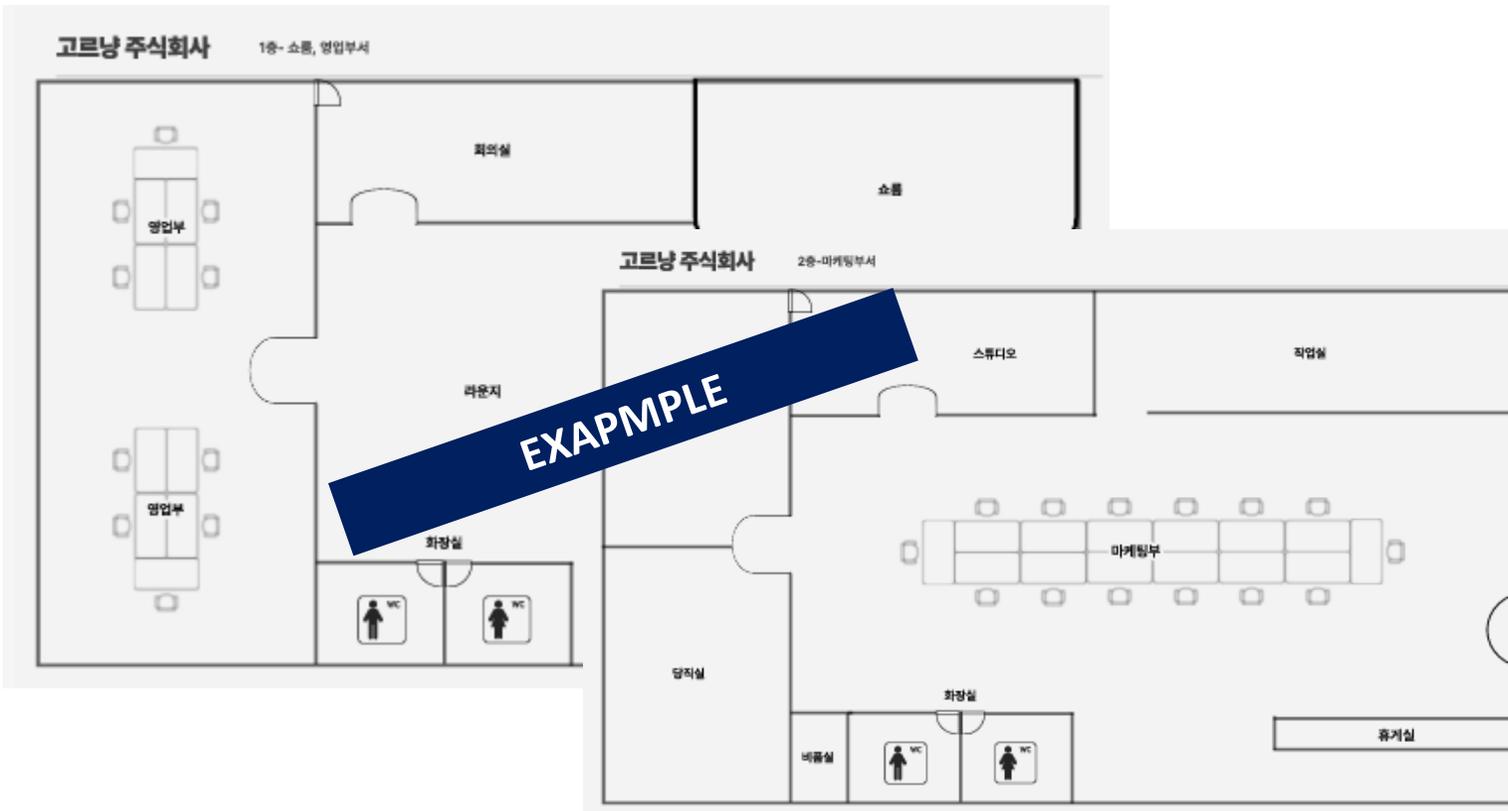


Goal : Understanding Company Organization

1. Design the organization of your desired company directly.
  - Students' thoughts on departments and appropriate number of people
  - Establishment of the role of the department
  - Definition of the work of the staff
2. Search for companies with published organization charts in the same or similar industries
3. Investigation and writing of equipment and facilities required for the departments written.
4. Investigation of appropriate salaries for each department staff.

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Example : Design Office Layout



Goal : Understanding Office Layout

1. Design a suitable office layout for the organization size
  - Layout of office space suitable for departmental work
  - Layout of facilities and equipment
  - Layout of office space and common space
2. Determine the size considering the location and rent of major offices

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Example : Build and operate own company in GatherTown

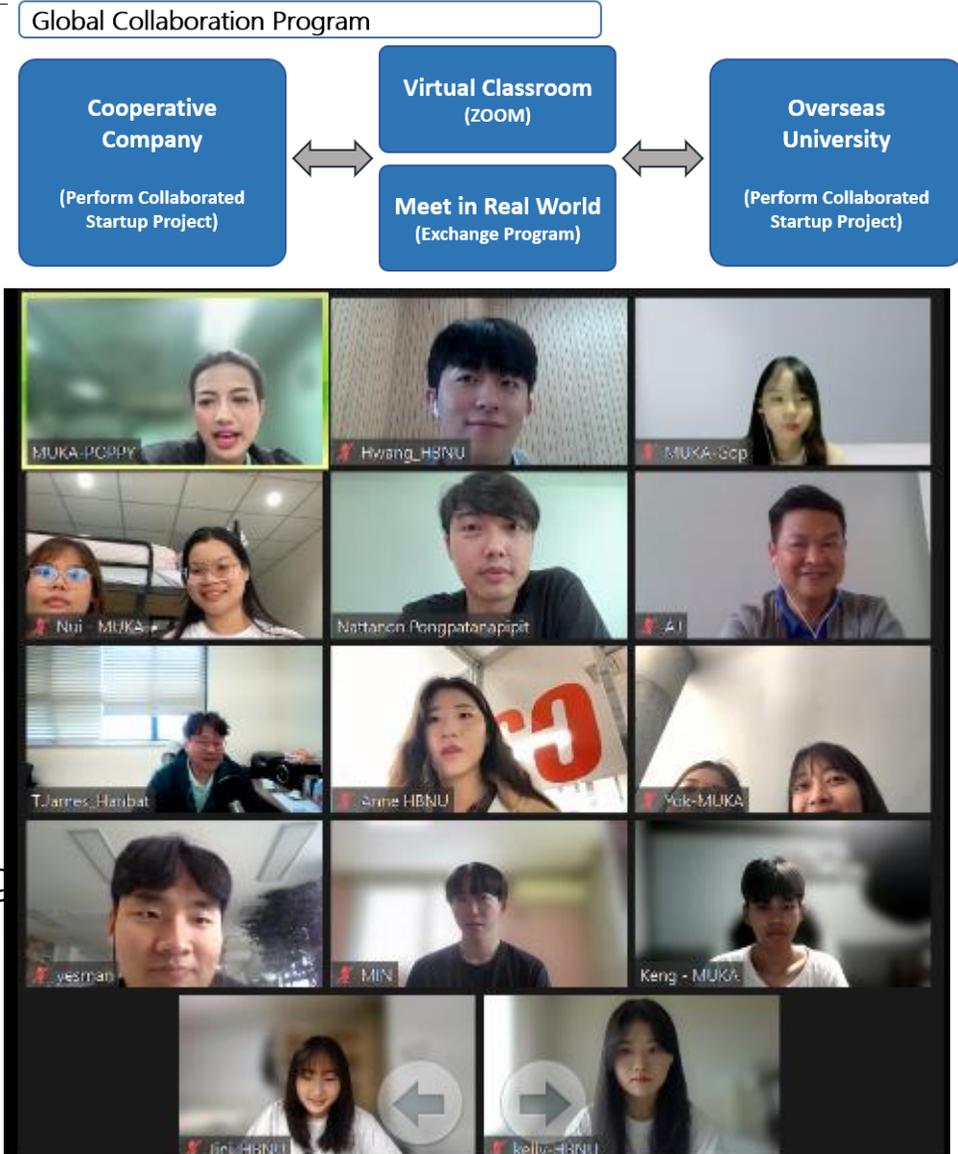


# 5. The Future Direction of Entrepreneurship Education at Universities

## GLOBAL Program

### Subject Brief

- Course name : Managing Virtual Company in Metaverse
- Goals :
  - Understanding Startup (Establishing a Virtual Company)
  - Understanding a Legal Condition, HR, Marketing, Strategies for New Venture
  - Provide and understanding of Using GatherTown
- 15 Weeks, 60hrs. (Regular Subject)
- 1 Professor and 7 students participated
- Grading : Completion of Project and Quality of Virtual Company Operating



# 5. The Future Direction of Entrepreneurship Education at Universities

## GLOBAL Program – Step1

**WHY DO YOU THINK THAT IS A PROBLEM**

Pricey compare to the minimum

**EXAMPLE**

## OUR TEAM MEMBERS



Instagram : @ypbooooo  
YAYEE (PIYAPHAT)



Instagram : @imnotnui  
NUI (BENYAPA)



Instagram : ssuum.in  
MIN(SUMIN KANG)



Instagram : diadmstxx  
ANNE(EUNSEO LIM)

**THAI CULTURE**

**INDUSTRIES IN THAILAND**

**KOREA**

**KOREA CULTURE**

**INDUSTRIES IN KOREA**

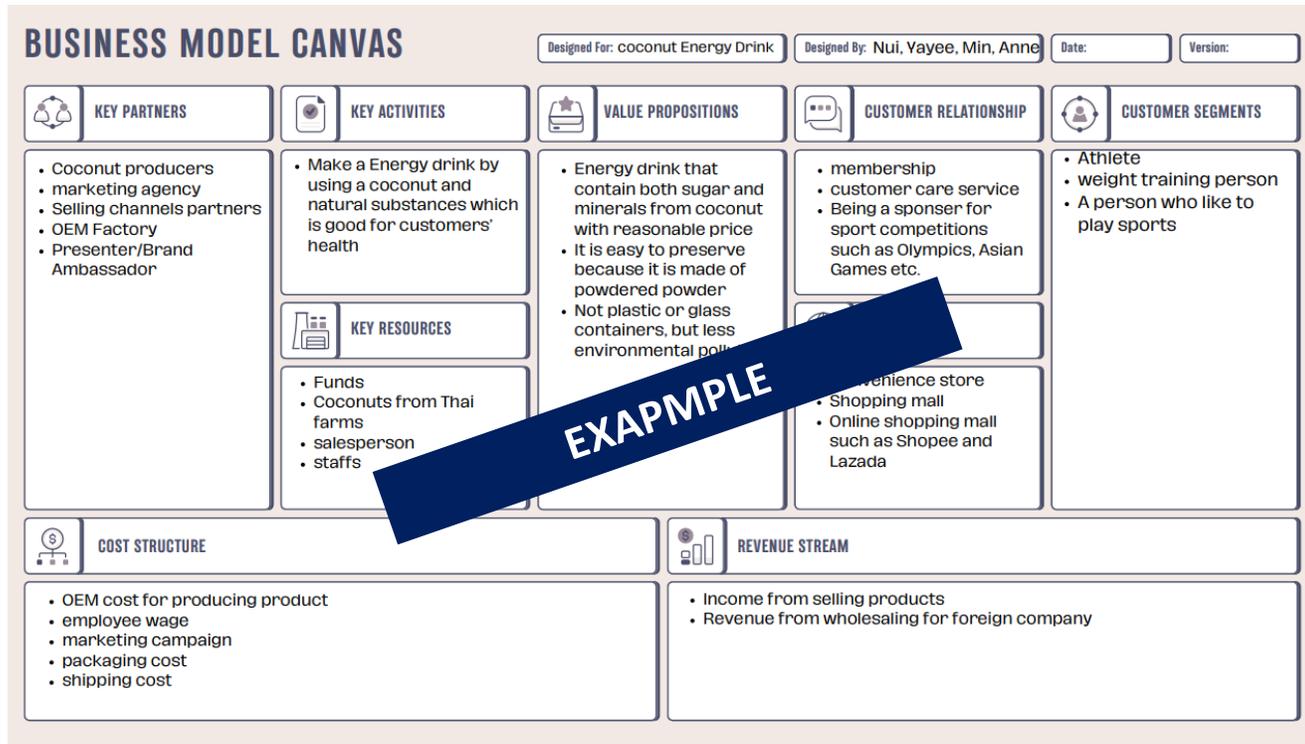
Goal: To get to know each other

Activities:

- Introduction of the culture and industry of the partner country
- Thai and Korean students form teams to create a business plan for an item
- Business plan is created through 6 two-hour classes and meetings using SNS

# 5. The Future Direction of Entrepreneurship Education at Universities

## GLOBAL Program – Step2



### Goal : Understanding BMC

- Business Model Canvas education
- Business Model Canvas creation
- Understanding and application of Problem Definition, Solution, and Value Proposition

# 5. The Future Direction of Entrepreneurship Education at Universities

## GLOBAL Program – Step3



Goal : Presentation

1. Presentation of the business plan
  - An important step in the business planning process.
  - An opportunity for the team to present their ideas and get feedback from a panel of judges.
2. Competition to be held at Mahidol University in Thailand from November 10 to 14, 2023
  - This competition is a great opportunity for Thai and Korean students to collaborate and showcase their business ideas.

## 6. Summary

### Preconditions for the development and rapid stabilization of entrepreneurial universities and startup ecosystem

- The need for government-led university startup ecosystems
- Government's systematic institutional construction and securement of continuous budget
- The activation of infrastructure, startup-friendly institutions, entrepreneurship education and research through large-scale budget support
- Rapid improvement in awareness, performance, and results of entrepreneurship in a short period of time
- The development of universities through performance expansion, such as technology holding companies and university funds

### Preconditions for setting the direction of future entrepreneurship education

- Education environment: PCs, cameras, microphones, etc.
- Instructors: Proficiency in using SW
- Partners: Securing and networking with companies, research institutes, and experts / Sharing of various teaching methods and cases
- Universities: Institutionalization of adjustments in the number of hours for entrepreneurship practice courses, and financial support for the construction of related environments
- Teaching methods: Development of teaching methods that can acquire skills needed by both students and companies



Ministry of Education



ASIAN DEVELOPMENT BANK

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SCOUT 수도권 일반대 사업단



Thank you.

Q&A

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Call : 8242-828-8411

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